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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,150	07/15/2003	Nelson Gonzalez	01109-1-0010	8499
24633	7590	06/28/2005	EXAMINER	
HOGAN & HARTSON LLP IP GROUP, COLUMBIA SQUARE 555 THIRTEENTH STREET, N.W. WASHINGTON, DC 20004			LUU, MATTHEW	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,150	Applicant(s) GONZALEZ ET AL	
	Examiner LUU MATTHEW	Art Unit 2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 and 65-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 65-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/3/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "genlock mechanism" as recited in claim 20, "a master timing device" and "slaves of said master timing regulating device" as recited in claims 21-22, the "load balancing ratio" as recited in claims 27-32 and 71-76 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-32, 65 and 71-76 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding independent claims 1 and 65, the specification fails to provide a clear meaning of the claimed "a graphics command replicator". Therefore, for the purpose of examining, "a graphics command replicator" is interpreted as "a graphics command generator".

Claim 1 also recites "off-the-shelf video cards". It is unclear what exactly are the "off-the-shelf video cards". Therefore, for the purpose of examining, the term "off-the-shelf video cards" is interpreted as the "video cards".

Regarding claim 20, it is unclear what is the claimed "genlock mechanism".

Regarding claims 21 and 22, it is unclear in the specification and drawings that shows "a master timing device" and "slaves of said master timing regulating device".

Regarding claims 27-32 and 71-76, it is unclear what exactly is the "load balancing ratio".

Dependent claims 2-32 are also considered rejected for incorporating the defects from their respective parent claims by dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 23-26 and 65-70 are, as best understood, rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (WO 97/14133) in view of Callway (EP 1061434).

Regarding claim 1, Taylor discloses (Fig. 1) an accelerated graphics processing subsystem comprising:

a graphics command generator (host computer system 101);

a plurality of video cards (subsystems 103, which includes the VGA 104) (Page 6, line 8); and

a video merger hub (DAC/LUT 109, see also Figs. 2A and 2B).

Taylor fails to teach a mechanism to synchronize the plurality of video cards signals.

However, Callway discloses (Figs. 1 and 3) a mechanism (controller 130) for synchronizing (synch control) a plurality of video cards signals. Therefore, it would have been obvious to a person of ordinary skill in the art to use the synchronization circuit of

Callway into the graphics processing systems of Taylor to synchronize the plurality of video signals which allows these signals to be displayed simultaneously on the display screen.

Regarding claims 23 and 67, Taylor discloses (Fig. 1) a video merger hub (DAC/LUT 109, see also Figs. 2A and 2B).

Taylor fails to disclose a video switch controller.

However, Callway discloses (Fig. 1) a video switch (141 or 143); a video switch controller (controller 130); a microcontroller (130); and a video output (RGB OUT 1). It would have been obvious to the person of ordinary skill in the art to use the video switch controller (130) of Callway into the video merger hub of Taylor to provide alternating frames of video data to the video merger hub.

Regarding claims 24-26 and 67-70, Callway further discloses (Fig. 1) the video ports (151 and 152) combine the output signals from a plurality of video cards (110 and 120) into a single graphic output and sequentially display the signal on a display device by triggering routing switches at appropriate time intervals (Section 0021).

Regarding claims 65-66, these claims are the combination of claims 1 and 23-26. Thus, see the rejections as set forth above.

Claim Rejections - 35 USC § 103

Claims 2-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor in view of Callway as applied to claim 1 above, and further in view of Lefebvre (The Hewlett-Packard Journal, May 1998).

Regarding claim 2, Taylor discloses (Fig. 1) the number of graphics command streams (2 pixel data streams) is equal to the number of the plurality of video cards (2 subsystems 103).

Taylor fails to teach the graphics command is a software module.

However, Lefebvre teaches that "OpenGL is a specification for a software-to-hardware application programming interface, or API, that defines operations needed to produce interactive 3D applications. It is designed to be used on a wide range of graphics devices, including simple frame buffers and hardware-accelerated geometry processor systems. Lefebvre further teaches "OpenGL is targeted for use on a range of new graphics devices for both UNIX based and Windows NO-based operating system platforms. These systems differ in both capabilities and performance."

Therefore, it would have been obvious to the person of ordinary skill in the art to use the OpenGL software into the graphics processing system of Taylor to generate a software-to-hardware application programming interface since this is well known in the art.

Regarding claim 3, Taylor discloses (Figs. 2A and 2B) each portion of the screen (110) displays a graphics command stream.

Regarding claim 4, Taylor discloses (Fig. 1) the plurality of video cards (103) is combined into a signal graphics output signal (DAC/LUT 109).

Regarding claim 5, Taylor discloses (Fig. 1) the display (110) is an LCD (Page 6, line 8).

Regarding claim 6, Lefebvre teaches that "OpenGL is a specification for a software-to-hardware application programming interface, or API, that defines operations needed to produce interactive 3D applications.

Regarding claim 7, Lefebvre further teaches "OpenGL is targeted for use on a range of new graphics devices for both UNIX based and Windows NO-based operating system platforms. These systems differ in both capabilities and performance."

Regarding claims 8-10, the clipping command in a 2D and 3D graphics processing system is conventional in the art.

Regarding claims 11-16, Taylor discloses (Fig. 2A) the sum of all the portions of the graphics screen combine to generate a full graphics screen. And Fig. 2B shows the overlapping regions. Furthermore, the non-overlapping graphics windows are well known in the art.

Regarding claims 17-19, it is well known in the art that a video board might include with more than one graphic processing units (GPUs).

Regarding claims 20-22, Callway discloses (Fig. 3) the synch control circuit includes a phase lock loop (PLL 352) and a voltage control oscillator (VCO 353).

Response to Arguments

Applicant's election with traverse of Group II, claims 33-64, in the reply filed on April 7, 2005 is acknowledged. The traversal is on the ground(s) that a "serious burden on the examiner if restriction is not required". This is not found persuasive because invention I has separate utility such as drawn to an accelerated graphics processing subsystem, wherein modified graphics command streams is equal to the number of the plurality of video cards, instead of the modified graphics command streams to a different video cards selected from the plurality of video cards. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Schinnerer (US 2003/0227460) discloses (Fig. 2) a plurality of graphics pipelines (25), a synchronization system (15) and a compositor logic (55).

-Pronkine (US 2003/0112248) discloses a plurality of parallel ADC.


-Krech, Jr. (5,784,075) a plurality of parallel 3-D geometry accelerators (32).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUU MATTHEW whose telephone number is (571) 272-7663. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BELLA MATTHEW can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Luu



MATTHEW LUU
PRIMARY EXAMINER